

# Practica 1, Ejercicio 1

Minerva Anastasia Gomez Galleguillos

31 de octubre de 2022

## 1. Ejercicio 1.

$$M = (\{q_0, q_1, q_2\}, \{a, b\}, \delta, q_0, \{q_1\})$$

$\delta(q, \sigma)$	$a$	$b$
$q_0$	$q_1$	$q_2$
$q_1$	$q_2$	$q_2$
$q_2$	$q_2$	$q_2$

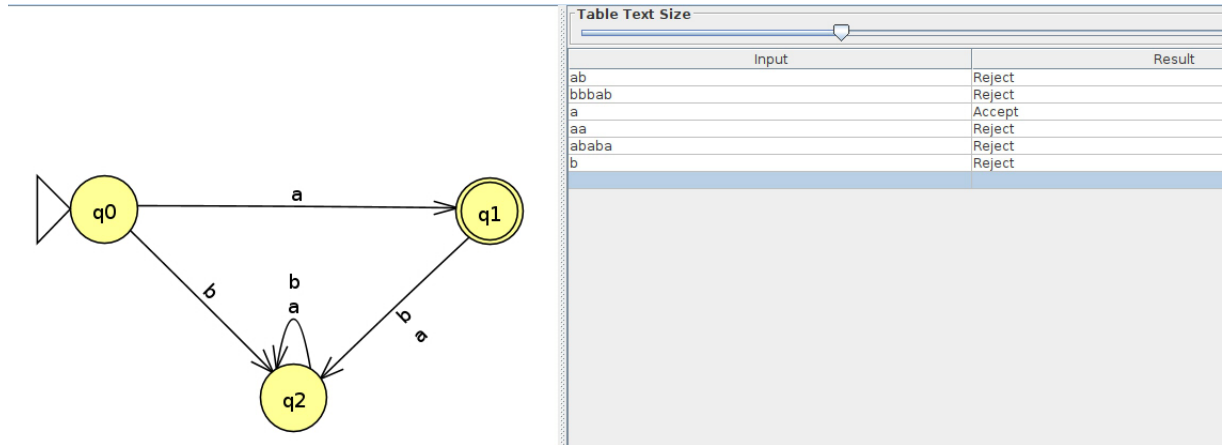


Figura 1:

$$(q_0, ab) \vdash (q_1, b) \vdash (q_2, \varepsilon) \wedge q_2 \notin F \Rightarrow ab \notin \mathcal{L}(M)$$

$$(q_0, bbbab) \vdash (q_2, bbab) \vdash (q_2, bab) \vdash (q_2, ab) \vdash (q_2, b) \vdash (q_2, \varepsilon) \wedge q_2 \notin F \Rightarrow bbbab \notin \mathcal{L}(M)$$

$$(q_0, a) \vdash (q_1, \varepsilon) \wedge q_1 \in F \Rightarrow a \in \mathcal{L}(M)$$

$$(q_0, aa) \vdash (q_1, a) \vdash (q_2, \varepsilon) \wedge q_2 \notin F \Rightarrow ababa \notin \mathcal{L}(M)$$

$$(q_0, ababa) \vdash (q_1, baba) \vdash (q_2, aba) \vdash (q_2, ba) \vdash (q_2, a) \vdash (q_2, \varepsilon) \wedge q_2 \notin F \Rightarrow ababa \notin \mathcal{L}(M)$$

$$(q_0, b) \vdash (q_2, \varepsilon) \wedge q_2 \notin F \Rightarrow ababa \notin \mathcal{L}(M)$$

## 2. Ejercicio 2.

```
{
  "name" : "a",
  "representation" : {
    "K" : ["q0", "q1", "q2"],
    "A" : ["a", "b"],
    "S" : "q0",
    "F" : ["q0"],
    "t" : [
      ["q0", "a", "q1"],
      ["q0", "b", "q2"],
      ["q1", "a", "q2"],
      ["q1", "a", "q2"],
      ["q2", "a", "q2"],
      ["q2", "b", "q2"]
    ]
  }
}

>> finiteautomaton("a", "ab")

M = ({q0, q1, q2}, {a, b}, {(q0, a, q1), (q0, b, q2), (q1, a, q2), (q1, b, q2), (q2, a, q2), (q2, b, q2)}, q0, {q1})

w = ab

(q0, ab) ⊢ (q1, b) ⊢ (q2, ε)

x ∉ L(M)
ans = 0
>>
```

Figura 2: